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Results Of A Mouse Census In A Spruce-fir-hemlock Forest In Maine

In connection with a seedbed-preparation study, a census of the mouse populations on several areas on the Penobscot Experimental Forest near Bangor, Maine, was made in October 1953.

The seedbed plots are located in closed, merchantable stands of hemlock, spruce, and fir in various parts of the Experimental Forest. These stands have little or no ground cover.

Since softwood tree seeds are important in the diet of native mice, the census was made to determine the population densities and their differences among the areas where the seedbed plots are located.

The trapping was carried out with the aid and advice of Horace F. Quick, Assistant Professor of Game Management in the Forestry Department, University of Maine. The method used, developed by Professor Quick, consists of a grid of snap traps--in this case 36--covering an acre. Seven 1-acre areas were trapped. A peanut butter-oatmeal mixture was used for bait.

The work was carried out in October because the home ranges of the mice are well established at that time of the year. Trapping was done on four consecutive nights. The purpose of trapping in this manner was to catch all of the mice on each acre but to discontinue trapping before mice from the surrounding forest came in to occupy the ranges of those removed. Therefore the number of mice caught on each area is an estimate of the population present at that time.

A total of 82 mice, or an average of 11.7 per acre, were caught on the seven 1-acre areas that were studied. This is within the range of populations found by other investigators using the same method. The per-acre totals ranged from 7 to 16. The average trapping success was 8.1 mice per 100 trap-nights.

On all areas combined, the traps took 22 mice the first night, 29 the second, 22 the third, and 9 the fourth. This trend, which was consistent throughout the seven areas, indicates that 4 nights were long enough to conduct the trapping. Diagrams showing the location of each catch give no evidence of invasion of the trapped areas from the outside.

Nearly all of the mice were red-backed mice (Clethrionomys gapperi). There were a few deer mice (Peromyscus maniculatus), and one field mouse (Microtus pennsylvanicus). The following tabulation shows the number of mice caught, by species, and totals for each 1-acre area:

Area No.	Red-backed mice	Deer mice	Field mice	Total
6	16	0	0	16
2	8	2	0	10
3	12	1	0	13
7	8	1	0	9
1	13	0	1	14
4	12	1	0	13
5	6	1	0	7
Total	75	6	1	82

The seven areas were arranged on the basis of subjective observations, in an increasing order of stand uniformity with respect to crown density, ground cover, and diameter distribution. Area Number 6, with the highest population, is the most diversified in these respects. Area Number 5, having the lowest catch, is a uniform, dense young softwood stand with trees mostly from 3 to 8 inches d.b.h.

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